FINDING OF NO SIGNIFICANT IMPACT

FOR

The Addition of Selenium to the Prestarter and Starter Rations of Weanling Swine

The Ralston Purina Company of St. Louis, Missouri has filed a Food Additive Petition (FAP 2185) for an increase, from 0.1 to 0.3 ppm, in the level of selenium supplementation allowable in swine prestarter and starter rations. Ralston Purina claims that this increased level of selenium supplementation is necessary for young swine due to a rapid depletion of selenium after weaning in this species. This claim is supported by recent scientific research (see attached references).

The Bureau of Veterinary Medicine has carefully considered the potential environmental impact of this petition and has concluded that the action will not have a significant effect on the human environment and that an Environmental Impact Statement therefore will not be prepared. Allowing this petition providing for increased selenium supplementation for young swine rations will result in a minimal incremental increase in releases of selenium into the human environment. The estimated increase in selenium introduction into the environment is 591 kg which is only a 2.7% increase over the estimated 21.5 metric tons of selenium currently used annually for supplementation of animal feeds for all approved uses.

An Environmental Assessment (June 1, 1981) that examines the potential environmental impacts of allowing this petition has been prepared and is attached to this Finding of No Significant Impact. Previous environmental documents have already evaluated the potential impacts associated with allowing selenium supplementation of the diets of several other animal species grown for human food. These other publicly available environmental documents consist of 1) an Environmental Impact Analysis Report (July 26, 1972) and an Environmental Impact Statement (January 8, 1974) for selenium supplementation of the diets of chickens, turkeys, and swine; 2) an Environmental Impact Analysis Report (August 26, 1976), and three Environmental Assessment Reports (November 21, 1977, June 6, 1978, and November 20, 1978) for selenium supplementation of the diets of ruminants (sheep, beef cattle, and dairy cattle); 3) an Environmental Impact Analysis Report (March 13, 1981) for selenium supplementation of the diet of ducks and 4) an Environmental Assessment (April 24, 1981) for the addition of selenium to the feed of laying hens (attached).

10-14-81
Date

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Preparer (HFV-310)

Date

Primary Action Officer (HFV-136)

10-14-81
Date

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Attachments

References

Mahan, D.C. and A.L. Moxon. 1978a. Effect of increasing the level of inorganic selenium supplementation in the post-weaning diets of swine. J. Anim. Sci. 46:384-390.

_____. 1978b. Effects of adding inorganic or organic selenium sources to the diets of young swine. J. Anim. Sci. 47:456-466.

_____. 1980. Effect of dietary selenium and injectable vitamin E-selenium for weanling swine. Nutr. Rep. Internat'l. 21:829-836.

Mahan, D.C., A.L. Moxon, and M. Hubbard. 1977. Efficacy of inorganic selenium supplementation to sow diets on resulting carry-over to their progeny. J. Anim. Sci. 45:738-746.

Meyer, W.R., D.C. Mahan, and A.L. Moxon. 1981. Value of dietary selenium and vitamin E for weanling swine as measured by performance, tissue selenium and glutathione peroxidase activities. J. Anim. Sci. 52:302-311.

Peplowski, M.A., D.C. Mahan, F.A. Murray, A.L. Moxon, A.H. Cantor, and K.E. Ekstrom. 1980. Effect of dietary and injectable vitamin E and selenium in weanling swine antigenically challenged with sheep red blood cells, J. Anim. Sci. 51:344-351.